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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,726	09/09/2003	Melissa Jane Bucu	YOR920030132US1	2799
35526	7590	04/17/2007		
DUKE W. YEE YEE & ASSOCIATES, P.C. P.O. BOX 802333 DALLAS, TX 75380			EXAMINER ZHE, MENG YAO	
			ART UNIT 2109	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/17/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/658,726

Applicant(s)

BUCO ET AL.

Examiner

MengYao Zhe

Art Unit

2109

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 to 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 to 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This is the initial Office Action based on the 10/658726 application filed on 9/9/2003.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claim 13** lack necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either "functional descriptive material" or "non-functional descriptive material." Both types of "descriptive material" are non-statutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

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Merely claiming non-functional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 2, 3, 13, and 14** are rejected under 35 U.S.C. 102(e) as being anticipated by Eilam et al., Pub No. US 2004/0111509, 6/10/2004 (hereafter Eilam).

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As per **claim 1**, Eilam teaches a **method, in a data processing system, for resource allocation of a plurality of tasks carrying penalties based on their completion time, the method comprising:**

**assigning the plurality tasks to one or more resources;** (*Abstract: servers has to be optimally allocated to customers. Here, the servers are resources, and customers' requests are tasks.*)

**and assigning start times for the plurality of tasks such that expected penalties for completion times of the plurality of tasks are minimized.**

(*Paragraph 27, and 33: The scheduler runs an optimization program that predicts the future workload and traffic in order to best assign resources to the current request at a best time slot. If not enough resources are assigned in a particular time window, penalty results.*)

As per **claim 2**, Eilam teaches

**Claim 2: Wherein expected penalties are minimized by continually assigning tasks and start times based on predictable potential next events.**

(*Paragraphs 21, 27, 32, 33 and 87: The system disclose by Eilam has a STF and LTF that predict future events, traffic and loads, and schedules current task based on predicted next events.*)

As per **Claim 3**, Eilam teaches

**Allocating thinking time into separate thinking time partitions for predictable potential next events;** *(Paragraph 33: The resource manager described by Eilam is responsible for making allocation decisions in real time based on continued monitoring of the work flow. The algorithm takes time to run, and this is considered as thinking time. Whenever a new request comes in from the customer, the resource manager has to make this decision. Therefore, the thinking time is partitioned.)*

**during each allocated thinking time partition, allocating resources for a predicted next event at a predicted time at which the predicted next event may occur;** *(Paragraph 33)*

**and assigning resources for queued tasks based upon an actual next event and an actual time of occurrence.** *(Paragraph 50, 54, and 60: The workload is predicted at each time slot  $t$ . Therefore, resources are assigned by resource manager according to the algorithm disclosed by Eilam.)*

As per **claim 13**, it is an apparatus that contains all the components that are capable of performing the method steps of claim 1. Because claim 1 is rejected, claim 13 is rejected as well.

As per **claim 14**, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 1. Because claim 1 is rejected, claim 14 is rejected as well.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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**Claims 4 to 11, 12, and 15 to 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Eilam et al., Pub No. US 2004/0111509 (hereafter Eilam) in view of Baker et al. Pub. No. US 2005/0065826, 3/24/2005 (hereafter Baker).

Eilam teaches claim 3.

Eilam does not teach

**Claim 4: wherein the step of allocating thinking time includes: reserving a first amount of time for performing an initial algorithm; and allocating a second amount of time for performing a randomized algorithm.**

**Claim 6: responsive to randomized algorithm forming a solution that is better than a previous solution, updating the seed value.**

**Claim 7: wherein the step of assigning resources for queued tasks based upon an actual next event and an actual time of occurrence includes: determining whether a best solution was found using the initial algorithm or the randomized algorithm; and responsive to the best solution being found using the initial algorithm, executing the initial algorithm and assigning resources based on results of the initial algorithm.**



**Claim 8: responsive to the best solution being found using the randomized algorithm, executing the randomized algorithm using the seed value and assigning resources based on results of the randomized algorithm.**

**Claim 9: assigning only immediately starting tasks**

**Claim 10: wherein an event is one of a job arrival, a task completion, a data change arrival, a managerial schedule request, and a termination request.**

**Claim 11: wherein a job includes one or more tasks.**

However, Baker teaches

**Claim 4: wherein the step of allocating thinking time includes: reserving a first amount of time for performing an initial algorithm; and** *(Abstract, Paragraphs 6 and 15: Baker teaches a scheduling system that increases efficiency and lower cost. The system includes a load leveler that minimizes make span, which is the time taken to complete the job entirely. This is the initial algorithm.)*

**allocating a second amount of time for performing a randomized algorithm** *(Paragraph 52: the cost minimizer runs a randomized algorithm.)*

for the purpose of have two different algorithms to use to optimize job scheduling.

**Claim 6: responsive to randomized algorithm forming a solution that is better than a previous solution, updating the seed value for the purpose of repeatedly finding the best scheduling plan. (Paragraph 52)**

**Claim 7: wherein the step of assigning resources for queued tasks based upon an actual next event and an actual time of occurrence includes: determining whether a best solution was found using the initial algorithm or the randomized algorithm; and (Paragraphs 15, 16, and 17: The randomized algorithm can be used directly or after the initial algorithm as been run. In one embodiment, only the initial algorithm is used. In another, only the randomized algorithm is used.)**

**responsive to the best solution being found using the initial algorithm, executing the initial algorithm and assigning resources based on results of the initial algorithm for the purpose of having at least one algorithm to perform the optimization. (Paragraphs 15 and 16 and 21)**

**Claim 8: responsive to the best solution being found using the randomized algorithm, executing the randomized algorithm using the seed value and assigning resources based on results of the randomized algorithm for the purpose of having at least one algorithm to perform the optimization.**

**(Paragraphs 17 to 19 and 21)**

**Claim 9: assigning only immediately starting tasks** for the purpose of giving resources to those who need it. *(All tasks are to be scheduled, therefore, they are considered as starting tasks.)*

**Claim 10: wherein an event is one of a job arrival, a task completion, a data change arrival, a managerial schedule request, and a termination request** for the purpose of scheduling tasks. *(Paragraph 17: the event is a task completion.)*

**Claim 11: wherein a job includes one or more tasks** for the purpose of subdividing a complicated process into smaller tasks to be scheduled.  
*(Paragraph 38: There are multiple tasks for a single entire job or process.)*

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to have modified the invention of Eilam with

**Claim 4: wherein the step of allocating thinking time includes: reserving a first amount of time for performing an initial algorithm; and allocating a second amount of time for performing a randomized algorithm,** as taught by Baker, because it contains two different algorithms to use to optimize job scheduling.

**Claim 6: responsive to randomized algorithm forming a solution that is better than a previous solution, updating the seed value, as taught by Baker, because it allows for the system to repeatedly find the best scheduling plan.**

*(Paragraph 52)*

**Claim 7: wherein the step of assigning resources for queued tasks based upon an actual next event and an actual time of occurrence includes: determining whether a best solution was found using the initial algorithm or the randomized algorithm; and responsive to the best solution being found using the initial algorithm, executing the initial algorithm and assigning resources based on results of the initial algorithm, as taught by Baker, because it allows for at least one algorithm to perform the optimization.**

**Claim 8: responsive to the best solution being found using the randomized algorithm, executing the randomized algorithm using the seed value and assigning resources based on results of the randomized algorithm, as taught by Baker, because it allows for at least one algorithm to perform the optimization.**

**Claim 9: assigning only immediately starting tasks, as taught by Baker, because resources can be given to those who need it.**

**Claim 10: wherein an event is one of a job arrival, a task completion, a data change arrival, a managerial schedule request, and a termination request,** as taught by Baker, because it allows for scheduling of tasks.

**Claim 11: wherein a job includes one or more tasks,** because it allows for subdivision of a complicated process into smaller tasks to be scheduled.

As per claim 5, Eilam in view of Baker teaches all of claim 4.

Baker further teaches

**wherein the step of allocating resources for a predicted next event at a predicted time at which the predicted next event may occur includes: executing the initial algorithm to form a preliminary solution; and repeatedly executing the randomized algorithm until an event occurs or the second amount of time expires. (Baker, Paragraph 52)**

Baker is silent to the recording of a seed value of zero to indicate the current solution as a preliminary solution.

However, to record a value zero as a mere indicator of a starting point would have been obvious to one of ordinary skill in the computer programming art as it is recognized in the art to use any type of indicator to signify a starting point, as long as it is recognized by the system itself based on its protocol.

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Because claims 6 to 11 are dependent on claim 5, and claim 5 is rejected, 6 to 11 are rejected as well.

As per claim 12, it is a method claim that is capable of performing the method steps of 5 to 11. Since claims 5 to 11 are rejected, claim 12 is rejected as well.

As per claim 15, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 2. Because claim 2 is rejected, claim 15 is rejected as well.

As per claim 16, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 3. Because claim 3 is rejected, claim 16 is rejected as well.

As per claim 17, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 4. Because claim 4 is rejected, claim 17 is rejected as well.

As per claim 18, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 5. Because claim 5 is rejected, claim 18 is rejected as well.

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As per claim 19, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 6. Because claim 6 is rejected, claim 19 is rejected as well.

As per claim 20, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 7. Because claim 7 is rejected, claim 20 is rejected as well.

As per claim 21, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 8. Because claim 8 is rejected, claim 21 is rejected as well.

As per claim 22, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 9. Because claim 9 is rejected, claim 22 is rejected as well.

As per claim 23, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 10. Because claim 10 is rejected, claim 23 is rejected as well.

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As per claim 24, it is a computer readable medium that contains all the instructions that are capable of performing the method steps of claim 11. Because claim 11 is rejected, claim 24 is rejected as well.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MengYao Zhe whose telephone number is 571-272-6946. The examiner can normally be reached on Monday Through Friday, 7:30 - 5:00 EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on 571-272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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M.Z.

  
KIMBERLY D. NGUYEN  
PRIMARY EXAMINER